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ABSTRACT

This practicum project sought to improve nutrition in a day care program serving children ages 2 through 14 years by increasing staff, student, and parent knowledge about nutrition. The primary goal was to increase knowledge and interest in nutrition and its relation to wellness of students, staff, and parents. The second goal was to provide adequate informative resources incorporating multidimensional approaches and activities in nutrition education. The program emphasized prevention measures by means of promoting healthier eating habits and an interest in exercise. A needs assessment was conducted to identify areas of instruction. Children were exposed to the benefits of a variety of foods, including ethnic foods. Staff training and parent outreach regarding nutrition were conducted to increase involvement. The intervention with the children included activities related to the current Department of Agriculture nutrition recommendations, preparation of healthy foods, students' weight and height statistics, poster contests, films on nutrition, nutrition labels, and general nutrition information related to decreased use of fat, salt, and sugar in children's diets and increased use of fruits, vegetables, milk products, and fiber. Intervention evaluation results found increased student and staff interest in nutrition, and better knowledge of food and its relation to better health. There was a marked improvement in the children's food choices and amount of nutritious food intake. (Three appendices contain the data collection instruments. Contains 47 references.) (Author)

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Improving Nutrition in a Day Care Program Through A Multidimensional Approach

by

Pranoti S. Mohanty

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Practicum II Report presented to the Ed.D. Program in Early Childhood in Fulfillment of the Requirements for the Degree of Doctor of Education

NOVA UNIVERSITY

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PRACTICUM APPROVAL SHEET

This practicum took place as described.

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4/6/93

This practicum report was submitted by Pranoti McManty under the direction of the adviser listed below. It was submitted to the Ed.D. Program in Early Childhood and approved in fulfillment of the requirements for the degree of Doctor of Education at Nova University.

Approved:

April 16 1993
Date of Final Approval of Report

Georgianna Lowen
Georgianna Lowen, Ed.D., Adviser

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Abstract

Improved Nutrition in a Day Care Program Through a Multidimensional Approach. Mohanty, Pranoti Samal 1993: Practicum Report, Nova University, Ed.D. Program in Early and Middle Childhood. Descriptors: Afterschool Programs/ Cultural Pluraliasm/Curriculum Design/Daycare Employed Parents/Early Childhood Education/Eating Habits/Education Research/Educational Practices/Elementary Education/Family Programs/Food/Food Service/Health Education/Health Needs/Health Promotion/Improvement Programs/Nutrition/ Nutrition Instruction/Parent Child Relationship/Program Implementation/School Community Relationship/Science Education/Teacher Attitudes/Wellness

This practicum was designed to improve nutrition in a day care program by increased knowledge and about nutrition. The primary goals was to have students, staff and parents interested and knowledgeable about nutrition and its relation to health and wellness. A second aim was to provide adequate informative resources which incorporate multidimensional approaches and activities in nutrition education.

It emphasized preventive measure to good health through practical, informed consumer oriented exposure to promote healthier eating habits and an interest in exercise. Less use of: fat, salt, sugar and more use of: fruits, vegetables, calcium (milk products) and fiber was used as the overall theme for the practicum.

The writer administered a needs assessment survey, used correct information to designed lesson which used multisensory hands-on approach to learning. She organized extensive visual display of materials and exposed children to the benefits of a variety of foods including the contribution of ethnic foods. Staff training and parent out-reach provided the positive atmosphere for the practicum.

The results of the practicum were impressive. Analysis of the data revealed that a multidimensional approach increased student and staff interest in nutrition. They showed better knowledge in food and its relation to good health. There was a marked improvement in their choices and amount of good food intake. Use of fresh and whole grain products was emphasized.

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CHAPTER I

INTRODUCTION

Description of Work Setting and Community

The child care service centers (total of 11) were located in low to upper middle class neighborhoods of an Eastern coastal state. Some of these centers were surrounded by stately homes while some others are located near lackluster apartment buildings. A wide range of job opportunities had attracted a large number of diverse populations to this community. A typical child care center served a multiethnic population that was a rich representation of Blacks, Hispanics and Asian American children. The child care centers provided a demanded service to working parents as they were conveniently housed at the county public schools. This allowed children to maximize the school-home activities target for parents and community as well as have access to the generally well equipped outdoor facility of the public schools. The public school location offered convenient transportation for working parents, many of whom were very young and single. Many parents received public assistance which pays for their childrens' child care service.

This child care service had been in operation for 15 years. A typical large center served 50-70 children (ages 2 1/2 to 14 years).

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There were approximately 570-670 children in the program. The program employed 55-60 staff members to operate its 11 centers. Most center directors and some teachers had college degrees. Other staff members had high school diplomas. The staff was encouraged to attain professional growth regularly. Thus various incentives such as flexible schedules or increased salary were provided by the director/owner of the center. Staff received regular workshops and training sessions on child care from the state Department of Health and Human Services. The center staff worked diligently to maintain the rigorous state health department standards required for licensing.

Unlike public schools, these child care centers were open 340 days a year. Thus, they were able to provide full service during public school holidays and during the summer vacation. Special planning for recreational activities and field trips, etc. were made for these heavy enrollment days. The owner of the center, possessing a doctorate in education, directed these special programs. She also oversaw all related activities geared specifically for each center.

The child care center had a meal program which provided breakfast, snacks and a hot lunch for students. Food was prepared according to state guidelines on nutrition for children and in accordance to seasonal availability and

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variation. For each day, more than one center-owned van delivered the prepared food items to the centers. The center director planned a balanced menu that meets state approval. Experienced kitchen staff (four) prepare the items from this menu in a well sanitized, center-owned kitchen. Parents received the regular monthly menu along with the center newsletter.

Writer's Work Setting and Role

The writer had been briefly employed by the center, first as a teacher and later as a center director for one summer. She was familiar with daycare services and state requirements in general as she had worked in child care settings for some ten years. During the project, the writer was a public school teacher (1st grade) in another location. Many of her students attended child care centers as more and more working parents required this service.

CHAPTER II

STUDY OF THE PROBLEM

Problem Description

Students, staff and parents had poor nutritional habits. Many children in the child care centers could be identified as obese. They disliked to participate in the center's well planned activity program (4 out of 10). A large number of children liked to be bystanders rather than participants for kick ball, soccer and other active sports. Even the younger children in centers would rather walk around, gaze, talk silly than climb the monkey bar or play jump rope, which are physically stretching activities. Very few students initiated or took part in jogging or running for fun. The same went for most teachers.

During a typical play time at a center, more children (6 out of every 10 children) choose a sedentary activity, such as coloring, browsing books, or chatting. This was the same for all age levels served.

Students and staff showed their lack of knowledge or interest in good nutrition. Many students as well as some staff often showed disinterest in eating fruits, vegetables served at center mealtime (4 out of 10 children). A typical snack/lunch time would have more leftovers of carrot sticks or plums than cookies or pretzels. Very few staff members could be identified as good role models who motivated

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students to take advantage of the balanced menu and try a variety of food items.

Students and staff consumed a large amount of high cholesterol and fatty foods, such as burgers, fries and pizza. Ice cream, cakes, and chips were consumed much too often by everyone.

Parents did not show interest in current information about nutrition and its relationship to good health. They were too busy to search and gather resources for their children's health needs (6 out of every 10 children). They seemed to take care of only the very urgent and state required health measures for their children. Other needs of children went unnoticed. Even though the local supermarkets such as Giant or Safeway had informative pamphlets and newspapers had articles about good nutrition, almost no one seemed to have time to take advantage of them.

Staff did not have access to interesting materials and resources for teaching a fun, forceful as well as effective nutrition unit. Staff received regular training and workshops about nutrition as well as other health-related information. However, these presentations were rather dry, neither interactive nor as inspiring as they need to be to activate staff interest. These materials were informative but fragmented, adult oriented and the presentations were didactic in nature. The child care staff was terrific;

however, a lot of imagination, creativity, and teaching expertise was required to convert factual information on nutrition to effective lessons for the students. The child care staff was not excited enough to generate student and parent interest on the topic.

The center director had reported other signs of ill health as well. Some students had been diagnosed as having high blood pressure (1 out of 10). This number seems to be increasing. Many students could be identified obese (5 out of 10). Many staff members as well as parents considered themselves over weight. They expressed a desire to reduce weight and improve eating habits (7 out of 10). Poor eating habits, such as a sugary breakfast, pizza lunch, pretzel snack and burger meals were reported often. Very few children and adults took part in regular healthy levels of exercise, an important approach to good health. The older children in the center showed little interest in the carefully planned sports activities. A lot of initiative from the enthusiastic teachers was necessary to involve everyone in a daily exercise program.

Many parents did not qualify for social assistance to receive free/reduced breakfast for their children. However, low economic status prevented them from providing nutritious breakfast or lunch. Many such students were hungry which affected their behavior, learning ability and health negatively.

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The television was a prime source of entertainment for children as adults. The commercials in television programs constantly lured the young minds for their empty caloric food items in order to increase their own revenues. The young and ill informed consumers were easily swayed to buy high priced, low quality, over processed food items that keep them malnutritioned in a land of plenty.

Problem Documentation

This problem was recognized by the director. Students, staff and parents had a lack of knowledge about nutrition, exercise and good health. The staff was not able to serve as role models to students because they were not able to make good healthy choices themselves. They were not well informed to assist the young, busy and diverse parent population on making healthy choices. They were not equipped with adequate materials and resources to provide an effective good nutrition curriculum for the various age groups in the child care program. As a result, their program on nutrition was unable to achieve the level of impact necessary to bring about positive dietary choices: healthy habits. Staff, children and parents were still prey to misleading television commercials. They continued to consume food items that were not good for health!

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Table 1.

Number of Nutrition Related Problems

Problems	No. of Children With Problem	Total No. of Children
Overweight	7	10
Obese	2	10
High Blood Pressure	1	10
Active in Exercise	4	10
Sedentary Activity	6	10

Table 2.

Food Intake Pattern

Pattern of Choice	Number	Total No. of Staff and Children
Junk Food	7	10
Healthy Food at the Center	4	10

Causative Analysis

Staff, parents and students had a lack of knowledge about nutrition, exercise and its importance for good health They were not well informed about nutritional properties of food, the Required Daily Amount (RDA) of vitamins, minerals,

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etc. to promote growth and maintenance. They were not aware of the importance of exercise to good health, extending far beyond conditioning of muscle.

Staff was not able to make good healthy choices about food intake and exercise. They often chose soda instead of pure water to quench thirst; slices of frosted cake instead of slices of apples with peanut butter. They were not well informed themselves to assist the young, busy parents from a diverse population in making healthy choices of food at home. The newcomer migrant families rushed to aculturate to the new living styles by guzzling down excessive amounts of processed food that are albeit convenient, but were loaded with large amounts of sodium, sugar and fat. Children today spend a large portion of their time watching television; Midkiff reports some 20 hours per week. These programs are sponsored by the companies who advertise their products (such as potato chips, candy, ice cream, canned soup) in a well researched, tantalizing, seductive manner for viewers of all ages. Often, they mislead the uninformed viewers by slogans such as: "soft drinks are 90% purified water and their good taste provides a pleasant alternative to water and juices". (The National Soft Drink Association)

Potato Chip Information Bureau sings the praise of their product: "Potato chip is simply a cooked slice of

potato and potato is one of the world's staple foods". There is no mention of salt, fat and preservatives!

The National Dairy Council and the Sugar Association assert that their products, such as candy or ice cream as "a terrific energy source" (ice cream carries Vitamins A, D, E, K in the body) but never mention the ugly words like saturated fats and heart disease!

As our schools battle to cope with increasing problems: discipline, budget cuts, drop out rate, and other dilemmas, and try to achieve national goals for reading, writing and math, other subjects such as health and nutrition education have become secondary subject areas. Nutrition education in public schools is uncoordinated, poorly funded and it lacks the excitement to bring about desired health and nutrition consciousness in young children. It seems far too many social needs and issues are expected to be solved by the educational systems. However, from a developmental and psychological point of view, saturation does occur and students can process only some portion of what is presented to them.

School lunches are another story. Even though children may hear something about nutrition in the classroom, political pressure still allows whole milk, processed, colored food items loaded with salt and sugars in school

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cafeterias. No wonder fast food items, such as pizza and burgers, are often preferred by youngsters at any meal!

'Working mothers, now a norm' reported the Washington Post (Sullivan, 1992). According to the 1990 census, the jurisdiction where the practicum was implemented, 67.5 percent of women (up eight percent from 1980 census) were in the labor force. As for women with young children, 66.6 percent were in the workforce. This is a significant increase from 1980 when the figure was only 50.3 percent. Cost of living/housing, need for stimulation were reported reasons for women to work.

Nutrition education, establishing healthy food habits and exercise requires systematic multidimensional approach of parent involvement. It requires adequate timespan (4-6 months at least) to help make the dietary changes present. Public school curriculums are lacking in such a program. State health department's nutrition education programs were less than powerful to involve the large number of working parents in their efforts.

Parent involvement plays a major part for school success. However, traditional ways of parent involvement (present in school, assisting school management, participation in special parent training program) were difficult as societal changes have resulted in more and more children being reared in single parent homes. For

instance 40 percent of today's school children will have lived with a single parent by the time they are 18; more than 20 percent live in poverty; 15 percent speak a non-English native language. The central paradox, as summarized by Lylte (1992), was that school participation may be most important for those facing serious social and psychological pressures, and they had the greatest difficulty taking part.

Working mothers and singles parents with young children comprised the bulk of day care parents. Moreover, these parents tended to be relatively young. So the solution needed to educate and involve the parents in the process.

Parents found it difficult to teach and thus slowly relinquished their responsibility of educating their youngsters. Busy parents often catered to the whims of children and fell prey to the convenience of fast foods. And, when they did prepare a home-cooked meal, it was not unlikely to sing the praise: Campbell's Soup is good for you! With all those chunky carrots, beans and tomatoes, it is a good choice! Little did they know about high level of sodium and fat content per serving as compared to a home-cooked variety of the same item.

Staff and parents had been subjected to repeated commercial approaches that equated status and happiness with consumption of their products. Moreover, some of these multimillion dollar industries have targeted the teachers

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and school population with free literature that is misleading or has well concealed information about ill effects of salt, sugar and saturated fat. Accordingly, even adults made faulty choices and have developed bad food habits which are very difficult to break.

Teachers and many practicing doctors did not have adequate knowledge about nutrition or when or if they did, it was almost impossible to eradicate the impact of the continued impressively organized big industry psychology of these propaganda. Moreover, peer pressure and social expectations had attached stigma to 'different', 'new', and 'old fashioned'. They represented backwardness, poverty, lack luster, old ways, unfit for industrialized, modern living style for advancement.

The staff was not well equipped with materials that were informative, easy to read, and colorful to stay abreast about many such issues that relate to nutrition themselves, so they could properly assist the parents and children about this important subject.

The staff did not have adequate age appropriate curriculum material to provide effective units on nutrition. The center serves some 500 students ranging from 3 to 14 years of age.

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Relationship of the Problem to the Literature

Other professionals have recognized this problem as well. Wynn (1987) discussed inequalities in nutrition associated with inequalities in health in the United Kingdom. He reported variations in upbringing, education, income and availability of food as common factors for good health. However, lack of knowledge about nutrition is so widespread that he proposed school meals to help set patterns for life long healthy eating habits.

In modern Italy, even though increased per head food consumption is regarded as positive economic advancement, Castantini (1987) showed concern about the problems of obesity and increase of heart disease there. He attributes this to increased consumption of convenient, processed foods with high level of additives, salt and fat. Castantini proposed a movement back to natural, Italian foods, in order to restore the nation's health. He also suggested that the food industry should aim to develop products for a more balanced healthy diet.

In the United States of America, after reviewing the total diet study, Pennington (1987) identifies similar trends in food habits of the population. He suggests that the recommended diet data be transferred for general public and other agencies to avoid potential public health hazards. It seems adult nutrition knowledge and food

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behavior can be affected by interaction in a classroom (Fox, 1988). Where as with children, food knowledge as well as 'hands on' experience seems to enhance food acceptance (Midkiff, 1982). Downey (1988), after reviewing the research on hypertension advocates an intervention program in schools so lessons on less use of salt and fat can enable youngsters to acquire healthy eating patterns. She also recommends lessons which will induce an overall increase in consumption of potassium and calcium, two important minerals for young children. Anatasiou (1988) reports dietary substances that act against cancer causing agents. He advocates providing strategies to help students analyze their own lifestyle to help choose a reduced fat and high fiber diet for a healthier adult life.

There is on-going debate about school based health care centers to meet the serious health needs of children. Across the nation, the success of such facilities to address drug and alcohol problems, immunization, family planning issues, drop out prevention, etc. has raised public interest bringing more such clinics to the school communities (Lear, 1991).

Gorski (1980) has described health education and its role in a comprehensive school program. She emphasized early school experience, stressing the role of teacher in health education as: using community resources, teaching

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personal health and hygiene, primary health care and social development to children. Crawford (1988) laments that even though 35 years of research has shown a link between diet and heart disease, no vigorous effort is made to improve American eating habits. She recommends establishing a National Nutrition Coalition to help educate the public.

Putnam, at the United States Department of Agriculture has been keeping track of American eating habits. According to Sagan (1992) who reported in the Washington Post, there has been some improvement; however, they need to do better in making healthy choices.

Wallis (1991) emphasizes the impact of high fat diet and its link with increased numbers of breast cancer (1991). He has analyzed the dietary practices of developed nations. Its seems certain cultural aspects of food preparation attribute to low breast cancer rate in Japan, Romania and Israel. (Per thousand USA = 231.7, Japan = 42.4)

It seems several studies opt for dietary changes, simpler lifestyle and exercise. The Washington Post reported results of Gallup Poll (1992) conducted for the Pharmaceutical Manufacturers Association Foundation, which has interviewed 901 adult heads of household. It showed that even though 16 percent credited new surgical techniques to be most helpful for their overall personal health factors, most people, 28 percent, believe that changes in

their lifestyle (diet, exercise and cessation of smoking) improved their overall health. Diagnostic devises (x-rays, CAT scans, heart monitors) and pharmaceuticals (vaccines, medicines) were other medical factors that gave credit (25 percent each) for improving individual health.
Duke (1992) analyzed the minority health data and its indirect connection with race. She points out that low economics and education aspects of this population may be the attributing factor, not race.

The grim national condition of health and well being is often reported. Several suggestions are also made. Rich (1992) reported findings from Kids Count Databook (issued by Casey Foundation and Center for the Study of Social Policy) that the social and medical condition of American children did deteriorate during the 1980s. The proportion of children living below the government's poverty line increased from 16 to 19 percent. More children lived in families with 1 parent (24 percent of all children). Their report rated some states worse than others in regard to children's issues.

Midkiff (1980) in her study of young children's food knowledge and food acceptance (vegetables) reported that even though food knowledge does not assure food consumption, acceptance could be enhanced with a program that allows first hand experience with food items.

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Berkeley (1982) has focused on some specific health conditions of blacks. These are: high blood pressure, cancer, diabetes, low blood sugar, Sickle-cell Anemia, iron-deficiency and Systemic Lupus Erythematosus. He thinks that "modern American lifestyle is simply more alien to black experience in America"; our health care system is geared "almost entirely to curing illness, not preventing it". He attributes this to the fact that most physicians do not have basic knowledge in nutrition as most medical schools do not require such curricular. He reports two surveys which showed that 90 percent of physicians flunked a test in nutrition. Besides, he analyzes health care as a big industry. So prevention oriented approaches could be seen as a threat to the practicing doctors as well as the health care system.

Berkeley also notes that in spite of increased access to health care facilities and better public availability of food products, the nation in general is far from being healthy. America's current mode of living has resulted in an increased consumption of processed food (low in nutrients, high in fat, salt and sugar; and there is very little need to engage in physical activity and exercise. This fashionable, modern way of living also attributes to a high level of stress, a prime factor for susceptibility to illness.

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Dr. Berkeley advocates up to date nutrition education, intake of more fruits, vegetables and whole grain products, cessation of smoking, less use of drugs, alcohol, fat, sugar and salt. He also encourages black Americans to try age proven stress reducing techniques such as meditation, and a harmonious living style to cut down stress. All these should be produced with another important component to health: Exercise!

Health of the Hispanics population also looks grim. Vobejda (1992) discussed the bleak compilation of statistics by National Council of LaRaza which showed that Hispanics are disadvantaged in virtually every measure including education and health. The report "State of Hispanics American 1991" (A1) asserts that more Hispanics married couples are in poverty (20 percent), compared to 70 percent for comparable white or 14 percent for black families.

As a result of poverty, lack of access to health care, work in hazardous occupations, the Hispanics are more likely to suffer from AIDS, diabetes and cancer. They also are least likely to be insured: 32 percent lack health insurance compared to 13 percent of whites and 20 percent of blacks.

Jacobson describes popular eating habits as:

"If the American way of Eating is analyzed, we often find that: people who eat brown rice and whole wheat

bread are sometimes called food faddists, while others who gobble twinkies and Sugar Frosted Flakes are considered normal, red-blooded Americans. At a time when nutritionist and dentists decry diets high in fat and sugar, Betty Crocker and Sara Lee continue to be two of American's most favorite cooks".

We never gave much thought to eating; thus in a land of plenty, we find malnutrition rampant.

Malnutrition, Jacobson explains, is not eating the right balance of food. Jacobson identifies three types of malnutrition: 1. hunger, 2. deficient in one or more particular nutrient, 3. over nutrition . . . too much of wrong food. The third, he thinks is more wide spread and deadly. Fortunately, he consoles, it can be defeated, inexpensively and quite deliciously.

The first type of malnutrition: hunger was almost defeated in the United States by numerous federal programs (1960-80), subsidized school breakfasts and lunches. Special aid to the pregnant, nursing women, elderly, food stamps, and WIC (Women, Infant and Children Program). However, 1981 brought budget cuts in social programs. An estimated 20 million citizens were considered hungry at some time of each month. Hunger, with or without government assistance cannot be eradicated until poverty is eradicated!

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The second type of malnutrition can be eradicated if well designed nutrition education programs can be targeted to the public. According to Jacobson, many people consume too small amounts of some essential nutrients as compared to Recommended Dietary Allowances. Examples are iron, zinc, magnesium and Vitamin B6.

The third type of hunger, which is also most widespread is over nutrition: too many calories, too much fat, too much cholesterol, too much alcohol, etc., etc. The result is unnecessary diseases that strike millions in the technologically advanced continent: obesity, diabetes, strokes, heart diseases and cancer. "The following statistics", he argues, "on various diseases caused by diet (sometimes in combination of other factors):

- o 59,400 deaths from colon cancer in 1984 and 90,000 new cases (high-fat diets, lack of dietary fiber)
- o 37,300 deaths from breast cancer in 1984 and 115,000 new cases (high-fat diets)
- o 545,000 deaths from coronary heart disease in 1984 and 1,250,000 heart attacks (too much fat and cholesterol)
- o 60 million people have high blood pressure (too much sodium and fat)
- o 156,000 stroke deaths in 1983 and 550,000 cerebral hemorrhages (too much sodium and fat)
- o adult-onset diabetes accounts for 135,000 deaths (mostly heart attacks) each year (too much fat, too little dietary fiber)
- o 5,000 cases of blindness from adult-onset diabetes each year (too much fat and sugar)

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- o the average seventeen year old in 1979-80 had eleven decayed, missing, or filled teeth; Americans spend billions each year repairing rotten teeth (too much sugar)

- o Americans spend about $400 million each year on laxatives to alleviate constipation (too little fiber)

- o approximately 14 percent of adult men and 24 percent of adult women are 20 percent of more above their desirable weight; one third of adults are 10 percent or more overweight (too many calories, too little exercise)".

There is a growing body of literature that tends to encourage adherence to simpler lifestyles in people.

Jacobson cites an excellent health report of Seventh-day Adventists who eat somewhat less fat and less meat than the average American. Their diet is high in grains, fruits, vegetables, and therefore high in fiber. They are also nonsmokers and nondrinkers. They suffer 30 percent fewer deaths due to heart disease, 25 percent fewer deaths due to cancer and 80 percent less problem with cirrhosis of the liver!

He also cites the success of the Pritkin Diet, devised by Nathan Pritkin. This diet underscores the value of eating fruits, vegetable, whole grains, low-fat animal foods. It also advised to consume less fat, sugar, and salt. Even though this is considered a stringent diet, it is similar to diets enjoyed by many Asians and Africans. With exercise it has shown to lower blood cholesterol level from 300 to 100!, an easy path to good health.

In conclusion, Jacobson emphasizes the dietary changes we should concentrate on: "eating more of good foods (vegetables, grains, beans, nuts), less fat-laden meats and diary foods, and fewer sugary, salty, greasy snack foods.

CHAPTER III

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Goals and Expectations

The goal in general, was that staff, students and parents would be more interested and knowledgeable about nutrition and its relation to health and wellness. Staff would have more resources to carry out an educational as well as informative nutrition education program. Students would make healthy choices in their food intake.

Behavioral Objectives

Objective 1. Students, staff and parents were to demonstrate more knowledge about nutrition.

Objective 2. Students were to make better choices in food intake (less: salt, sugar, fat. More: vitamins, fresh fruit and vegetables), calcium (milk products), fiber.

Objective 3. Staff and parent would have more access to information on nutrition and health.

Objective 4. Students, staff and parents were to show more interest about nutrition in general (6 out of every 10 participants).

Measurement of Objectives

Objective 1. The writer planned to conduct pre and post survey/interview to measure staff, parent and student knowledge about nutrition and good health. (AppendiX A)

There would be an increase of at least five scores compared to the scores in their pretest. (50 each of parents, staff and children)

Objective 2. The writer planned to conduct pre and post survey on meal time choices and compare their students improved food intake behavior resulting from their participation in the project. (Appendix B) Younger children were to demonstrate their better choice in food intake as observed during mealtime.

Objective 3. The staff would be able to access more information and resources on nutrition. There would be at least ten such items available for their use.

Objective 4. The staff, students and parents were to show more interest about nutrition in general. Pre and post interviews on nutrition (Appendix C) were to show their increased interest in nutrition (out of every 10 interviews, 6 were to show more interest in nutrition) as compared to the present (only 4 out of 10) number showing such interest.

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CHAPTER IV

SOLUTION STRATEGY

Discussion and Evaluation of Possible Solutions

The solution was recognized widely and many solutions are suggested.

Mather (1988) has discussed methods that can be used to prepare preschool children for health care experiences. Wilson (1979) advocates a child initiated preschool preparation program. Koblinsky (1987) describes a volunteer nutrition consultant project in which home economists teach, share and advise nutrition expertise with the headstart children and families. McCormic recognizes that many health habits are formed early. So "health habits" are best created early/during preschool years. Boehnlein (1984) suggested parent involvement for an effective nutrition curriculum at school. It will ensure student awareness and practice of healthy habits.

Keeling (1983) describes hospital linkage with community resources to serve the high risk low income Mexican American families. This low cost program emphasizes informed in-home education based on cultural values of the Mexican American community to enhance parenting skills, promote physical and mental health of infants. Hinze (1980) reported findings from Student-Parent-Educator-Administrator for Children Program that the success of a nutrition curriculum increases as understanding of child care food

program and nutrition education are linked together. A similar project in Minneapolis Public Schools proved successful to promote health by: (1) food for growth and development, (2) food for growth and consumption, and (3) food in relation to cultural, social, psychological and physiological aspects of life. A 10 session, 20 hour workshop for child care center cooks effectively promoted cook's awareness of adequate nutrition for children.

Grever (1977) describes a preschool health screening service which employed nurses at a day care center to focus on health education, safety and nutrition. Children were screened for immunization, vision and learning, T.B., anemia and sickle cell, etc. They were referred for further assistance if needed. It was a proven advantage for all children in spite of their varied economic background. Kaplan (1981) compared three nutrition education inservice models for urban day care providers. He reports that meal time intervention and classroom activities prove effective to reach the students. Brief and on-going sessions of staff training are also useful to implement a nutrition education. Some studies (Pruess, 1989) denote success of vitamin therapy in children. "The proof of the pudding is in the eating and in the subsequent metabolic effects," was rightly echoed by a pioneer nutritionist, Roger William (1962, p. i).

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Dr. Haas (1985) emphasizes a diet consisting of whole grain, fruits, vegetables, calcium and fiber for optimum energy and keeping a balanced weight! He also advises minimal use of salt and fat for his celebrity sports athletes.

Teachers, doctors and dieticians have recognized that the eating disorder of dieting and binging and starving is seen at very early stages in children.

One of the reasons is that more and more adults are dieting and children tend to emulate adult behavior.

However, dieting is a repetitive process because diets most often lead to temporary weight loss followed by a rebound effect to a higher weight. Clinical advice is to establish a good eating pattern and exercise.

More and more experts agree that a change in habit is more important than just loosing weight. Squires (Post, 1992) analyzed various research findings from: multiple risk factor intervention trial, obesity, research center, National Institute of Health, etc. Their findings suggest a slow, long weight loss and reasonable goals. Low fat (check calories) and exercise are an effective means of maintaining average weight.

A habit is difficult to change. However, early intervention in children's food choices and regular exercise can promote healthy habits.

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This is not new. The U.S. Surgeon General's Report (1979) urged Americans to change their eating patterns and consume:

- o only sufficient calories to meet the body needs and maintain desirable weight (fewer calories, if overweight);
- o less saturated fat and cholesterol;
- o less sugar;
- o relatively more complex carbohydrates such as whole grains, cereals, fruits and vegetables;
- o relatively more fish, poultry, legumes (e.g. beans, peas, peanuts) and less red meat.

A simplified visual concept to nutrition that supports the behavior has been attempted.

Burger (1987) introduces a nutritional pyramid which visually describes the four simple elements: carbohydrates, fiber, fats and protein. As the great pyramids, this figure is the said power to health. The Pyramid uses: carbohydrates 55%, protein 15%, fats 20%, super sweets 10 percent. It can build the body's essential systems such as cardiac, nervous hormonal. According to Burger, it is the best dietary prevention that also promotes synnergic energy.

This concept, after undergoing a long political as well as corporate debate, has been approved by the Department of Agriculture (1992).

Description and Justification For Solution Selected

The writer thought it would be helpful to become (1) more knowledgeable about nutritional aspects of food; (2) obtain age appropriate attractive materials for curriculum in nutrition; (3) provide a well planned schedule of activities that involve parents and students; (4) expose the staff, parents and students to nutrition fallacies of some everyday used commercial products; (5) provide hints, strategies for making the most of convenient food products; (6) emphasize importance of exercise; (7) educate students about the self-serving nature of T.V. commercials on food products as compared to whole grain, natural food products.

The writer planned to help by having attractive materials and resources that are visually informative, experiential and also fun to use (Sagan, 1992). We tend to remember only ten percent of what we read, 20 percent of what we hear, thirty percent of what we see, 50 percent of what we see and hear, 80 percent of what we say, and 90 percent of what we say and do.

The writer planned to help the staff as well as parents by having workshops, healthy recipe contests, etc. stimulating involvements, exposures, and training lessons. Research shows that adults and teachers are important to the teaching process of youngsters. Adults need to be involved in this learning process. Parents and teachers can become

excited about the importance of nutrition and can act as change agents if they are actively involved in the process.

It would help to have staff as well as parents having workshops, healthy recipe contests, etc. and adult-oriented activities that stimulate their exposure and involvement with the project.

It was planned to have student involvement through play, art and food experimental activities. The educational theorist, Piaget, advocates similar experiences for optimum intellectual growth and development of young children.

The writer planned to establish a specialized goal for: less salt, sugar and fat (SSF), more fruits, fiber and calcium (FFC). Goals and objectives are more likely to be achieved if they are well planned and specific in nature. Positive reinforcement for participation, interaction and desired behavioral outcome can act as stimulus for learning about nutrition. According to Skinner, it can also bring positive change in behavior.

The writer planned to have staff and parents become actively involved with the Nutrition Improves Health (NIH) Project. Social approach to education provides impetus for all age levels. Adults are important role models for children. Their interest on the subject is valuable to the success of the project.

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The Federal Behavior Risk Factor survey questioned adults in 44 states and the District or Columbia. Their results: a national trend indicator, reports an increase in obesity (23 percent now compared to 21 percent 1987). The percent of people who said they get little or no exercise was 59 percent, same as reported in 1986. In the District of Columbia, 73 percent said they get little or no exercise (fewer than three twenty-minute sessions a week). One of our national objectives needs to be to have more people at a healthy weight. (Post, 1992) It seems about half of the nation's 6-7 year old children are already at risk of developing heart disease because of obesity, high blood cholesterol, a sedentary life style or high blood pressure (Jordan, 1992). Not only that, there are as many as 70 million Americans who have "high normal" blood pressure.

Associated Press reported findings of a health study involving 2,132 people. Lead author, Paul K. Whelton of Johns Hopkins University, School of Hygiene and Public Health analyzed the effects of dietary supplements, relaxation, weight loss and consumption of less salt. This study concluded that among the four variables, weight loss and less salt show better results in reducing "high normal" blood pressure of mild hypertension.

It was planned to have a good exercise program in the center. Students and staff could benefit most out of the

project if they were motivated to establish a regular exercise program and be proud of it. Use of musical instruments, songs, games and chants could make the activity enjoyable for many who shun a planned exercise program. Awards were to help motivate the competitive type youngsters.

Report of Action Taken

The writer encountered many excitements as well as some roadblocks during the implementation.

Excitements: The writer, who planned activities for the project was asked to personally carry out the project as well. An initial two full-day kick-off activity introduced the topic for the nutrition project. Daycare staff, parents and students were very enthusiastic about taking part in the questionnaire and shared their existing knowledge about nutrition. They learned about the purpose of the project:

- writer's interest in children and their well being
- nutrition and its relation to good health
- general knowledge about nutrition and exercise
- reason for need to improve some common, not so healthy practices
- need to become informed consumers
- purpose for the project, and its emphasis
- outline of activities to be carried out

- their role in making it useful for themselves and others - a healthier America.

The writer found staff, students and parents showed great enthusiasm. Their prior knowledge about four basic food groups was enriched with current Recommendation of Daily Allowances by the USDA. (The Pyramid) Students were able to learn the concept by hands-on experience of cutting and pasting, making a fruit salad (using yogurt) and exercising to music. They also watched an educational film which explained the relationship of nutrition to good health. Staff helped take students' weight and height which was shared and recorded by students. Their blood pressure could not be checked; however, they became aware of this term as another physical measure of health. Each student received a My Nutrition manila folder which contained their personal physical data, pamphlets and brochures on nutrition and their worksheets from this nutrition session.

Students were asked to share positive behaviors, shared healthful activity (oatmeal breakfast, fresh fruit and lunch, etc.) and a positive plan of action was rewarded by extra information on the subject. This was captured in a picture using a 35mm camera as a reward which was to be shown later to parents and displayed at their center. Group pictures were also taken for total group reward and to

promote group consciousness for nutrition awareness and provide support for each other in an attempt to establish healthy food habits.

Open discussion led students and staff to become aware that good nutrition leads to good health which helps learning in general. They also recognized that simple food items do cost less compared to similar processed, packed food items and they also save dollars by lowering doctor bills.

The writer enjoyed her own experience with this kick-off activity. Students and staff were truly enthusiastic for more knowledge on nutrition and were interested to take part in future fun activities, such as poster contests, nutrition quiz, cooking and art activities, etc. Staff was very cooperative and supportive in accommodating the writer's time schedule and plans with their own demanding schedule with the students.

The writer used the questionnaire information to plan her approach for the next nutrition lessons which were divided in three segments (two-month periods each).

1. less fat - more fruits and vegetables
2. less salt - more fiber
3. less sugar - more calcium and ongoing emphasis: exercise

Each segment was given a pre and post test (Appendix B) for evaluation.

Each segment was taught with practical show and tell (cannola oil vs crisco, fresh apple vs canned fruit cocktail) approach using visuals such as charts and diagrams to bring about better comprehension. Other old favorite lessons such as fruit and vegetable prints using poster colors were made educational by using the process as a group collage. Students covered large construction paper with lots of fruits and prints (in different colors) but allowed only a few dots of white paint to show the small amount of fat in our diet. It was explained that we get most (300%) of fat from meats, a source of protein for us, so our need for alternative protein that has no fat and is high in fiber, low in cost. Dried peas and beans were glued on the colorful fruit and vegetable print. The students were asked to verbalize their experience by chanting less fat-more fruits and vegetables. Less crisco, more cannola, less meat, more beans, etc. which made it fun for them as they gained the added emphasis: less fat more fruits. Again fresh was discussed far better than processed items.

Thus, the specifically designed lessons used various education strategies to provide correct nutrition information and used research data as guidance for needed change in our eating habits. The lessons showed ways and means of making those changes possible for children and staff. New and interesting foods such as pomegranate,

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baked sweet potato, as well as the importance of brown bread and rice, fresh vs processed was emphasized through out the implementation. Students were reminded of the need for eating a variety of foods so our bodies can get all the vitamins and minerals they need.

During the implementation, a variety of approaches were used to involve as many people as possible and make learning meaningful and fun!

The poster contest, good vs bad food collages were used as culminating activities. Each lesson ended with an exercise activity.

Films on nutrition were shown to depict commercial propaganda for low quality/high priced food items. Pamphlets and brochures were passed out at each lesson for parent information. Student pictures and work areas were displayed on the center's nutrition bulletin board.

Parents received the nutrition information regularly through the children and staff. Staff and children were given strategies to cut fat, salt, and sugar from their diets. They were encouraged to consume more fresh fruits and vegetables, whole grain products, foods high in fiber and calcium. They were given a list of every day food items for each of the above criteria (list of nutritionally better vs poor cereals, foods low in salt vs high in salt, food items low in sugar vs high in sugar).

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Popular food items such as poptarts, twinkies (high fat) soft drinks (high sugar) and potato chips (high salt) were analyzed for their nutritionally damaging role in their diet. At the same time children were presented with alternatives such as cream of wheat (zero fat), skim milk (less sugar) and popcorn (less salt) for similar food choices.

The importance of vitamins and minerals was discussed and the use of whole grain products such as brown rice, brown bread, bulgar and tabuli were emphasized throughout the practicum.

Children, staff and parents were shown real boxtops, bottles and cans of food products as examples of good vs bad. They were asked to cut and paste pictures of similar items; older children were taught to read food labels for main ingredients in a package (first item), secrete words for sugar (sucrose, fructose) salt (sodium, MSG) horrendous amount of additives in processed food. Older children learned to use '<u>Food Guide</u>" which listed sugar, salt, fat fiber, calcium content of food items. They found this very interesting and fun. Many purchased their own copy of the guide from a local grocery store. They were thus encouraged to choose fresh, home-cooked food for healthier meals. They were motivated to learn to cook simple nutritious dishes. They were asked to help parents make better choices in

grocery stores. They were shown various healthy ethnic foods (such as tacos, tofu, bean sprouts, burritos, dals, pasta, etc.) and practices that could make their meals more enticing. It was emphasized that people tend to make these healthy items unhealthy by adding too much meat, salt, cheese and butter. Consumers need to change their preference for foods loaded with salt, fat and sugar. Simpler foods, low in salt, fat and sugar are also less expensive for us to use; whole grains and fresh produce have move vitamins and minerals.

The consumer education department of a local food chain had started a nutrition awareness program for young children. They published a free monthly activity sheet for elementary age children called 'Kids Corner'. The writer made full use of this material in her lessons. The children were very excited about all the above activities because they also earned token rewards for their involvement. Nutrition quizzes were challenging as well as informative. Older children liked to investigate the hidden nutritional information. They used media information, library, etc. for this activity and took great pride in their findings.

The center was able to keep a 24-hour food recall to help students think about their food consumption. Parents' involvement in this activity proved fruitful in raising their interest on the subject.

Posters, collages, student pictures, photos and activity sheets for each segment decorated walls of the day care center. These acted as theme setter, motivator, reminder as well as learning material for students, staff and parents.

Road blocks: The writer was faced with some roadblocks which required adaptation.

1. The child service center staffs could not be relieved for a total staff training session which featured a guest speaker on the subject. The writer met with each center staff to provide the needed information.
2. The centers' kitchen was located in another county, a great distance from other centers. The writer could not meet with the kitchen staff for a training session. The writer had to rely on their training from the county health department.
3. The writer was able to send out only two parent newsletters. The childcare service as well as the writer had numerous unwarranted difficulties in their efforts to send more parent newsletters. However, the writer kept positive personal contact with parents as she met them in various centers.
4. Plans for a nutrition oriented holiday were not carried out because each center had its own

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traditional holiday activities. The parents, staff and children seemed too extended during this time to focus on new changes. However, nutrition orientation to holiday practices was discussed and students were encouraged to enjoy with caution.

5. Some centers operated in public school facilities with restricted display of any material on the walls. This posed a big problem as the practicum recognized visual learning. Students made use of their tactility as well as oral participation to make up for the visual learning.

CHAPTER V

RESULTS, CONCLUSIONS AND RECOMMENDATIONS

Results

The project goal in general was to have staff, students and parents be more interested and knowledgeable about nutrition. The staff would have more resources to carry out an educational as well as informative nutrition education program. The students would make healthy choices in their food intake.

The project which was carried out for eight months, did achieve successful results.

Objective 1. Students, parents and staff were to demonstrate more knowledge about nutrition. Results: Students, parents and staff were more interested and knowledgeable about nutrition.

The writer conducted a pre and post survey/interview to measure staff, parent and student knowledge about nutrition and good health. (Appendix A) There was an increase of at least five scores compared to the scores in their pretest (20 each of staff, parents and 50 students).

Nutrition Interview (Appendix C, 75)

Pre Results	Post Results
Most people ate very little whole grain, fresh fruits and vegetables. They drank sodas, ate too many servings of fatty foods and almost no one tried to select foods rich in minerals.	Results showed improvement in all areas.

They did drain water from boiled vegetables; did not eat fresh product or whole grain, did not exercise, and did not aim to learn about nutrition. However, they did think it was important to make healthy meals choices and exercises.

Scores ranged from 3-7 Scores ranged from 7-10

A scale of one was given to healthy choice and zero was given to non-healthy choice. (Items 5, 7, 10, 11, 12, 13 were used for the criteria to assess food knowledge/healthy habit. Other items were used for demographic background of the population.

Twenty each of staff, parents and 50 students were given the pre and posttest. Their average posttest scores (number of scores divided by number of participants) were higher compared to their pretest scores.

Objective 2. Students were to make better choices in food intake (Less: salt, sugar, fat. More: vitamins, fresh fruit and vegetables), calcium (milk products), fiber. Result: Students were able to make better choices in food intake.

The writer conducted pre and post surveys in meal time choices and compared students' improved food intake behavior resulting from their participation in the project. (Appendix B) Younger children demonstrated their better choices in food intake during mealtime.

The staff had access to more than ten informative research items available. These items explained nutritional information behind the fun activities they teach.

Pre/Post Test (Appendix B, p. 71)
Fat vs Fruits and Vegetables

Pre	Post
Three out of ten choose less fatty items. However, six out of ten said they thought fruits and vegetables are good for you.	Six out of ten choose less fatty items. All said fruits and vegetables are good for you.
Scores ranged from 3-5	Scores ranged from 5-10

Twenty staff and 50 students participated in this pre/post survey. Their scores were added and divided by the number of participants to obtain the average. The total possible score was ten.

The children were not knowledgeable about the fatty foods and its negative effect on health. They did not have an understanding of alternative similar less fatty food items which could be chosen (Bagel vs donut). Also, among various fats, knowledge about saturated (crisco) vs unsaturated (cannola oil) was a definite practicum gain.

Many children as well as adults said that fruits and vegetables were good for them. However, only a small number was aware that fresh was a better choice than canned ones.

Again a score of one was given to each healthy choice and a score of zero for each non-healthy choice.

Pre/Post
Less Salt/More Fiber

Pre	Post
Two out of ten choose less salty food. Only three out ten choose more fiber rich foods.	Eight out of ten choose less salty food. Six out ten choose foods high in fiber.
Scores ranged from 3-7	Scores ranged from 7-10

Twenty staff and 50 students participated in this pre/post survey. Their scores were added and divided by the number of participants to obtain the average. The total possible healthy score was 12.

More people choose salty, less fiber, foods in the pretest. The term fiber needed some explanation and required concrete examples. The post results showed a marked improvement in this area. A score of one was given to each healthy choice and a score of zero to each unhealthy choice in the test.

Pre/Post
Less Sugar/More Calcium

Pre	Post
Two out of ten choose less sugar items. Three out of ten chose more calcium rich foods.	Eight out of ten choose less sugar items. Seven out of ten choose more foods rich in calcium.
Scores ranged from 4-6	Scores ranged from 8-10

Twenty staff and 50 children participated in the pre/post survey. They scores were added and divided by the number of participants to obtain the average. The total possible healthy score was 12.

More people chose sugary and less calcium items in the pretest. The term 'calcium' had to be explained to children.

The writer used the seven-item pre post test. A score of one was given to each healthy choice and a score of zero to each unhealthy choice in the test.

Objective 3. Staff and parents would be able to access more information on nutrition. There would be at least ten such items available for their use. Results: Staff was able to obtain more resources and information on nutrition. They have access to 12 such items available for their use.

The daycare staff had access to resources that contained more correct information. They were given a resource packet that had more than 40 information pages from various books which provided current nutrition information. They have a copy of a cookbook which emphasizes less fat, salt and sugar. They receive a magazine subscription to "Nutrition Action", a publication from center for Science for Public Interest. This publication provides up-to-date consumer information on the latest research findings and commercial packaged products.

Resource Package

The center had only cookbooks for the staff to use. The resource packet has more then 40 information pages from various books as a resource to nutrition. The centers have a cookbook which emphasizes less salt, fat and sugar.

Objective 4. Students, staff and parents were to show more interest about nutrition in general (6 out of every 10 participants). Results: Students, staff and parents showed more interest about nutrition in general. Pre and post interviews in nutrition showed their increased knowledge and interesting nutrition. Out of every ten interviews, eight showed more interest in nutrition as compared to previous number only four out of ten who showed interest in nutrition.

Staff and students showed more interest about nutrition in general. Pre and post interviews on nutrition showed their increased knowledge and interest in nutrition. Six out of every ten showed more interest in nutrition as compared to four out of ten in the pre practicum interview. Students eagerly welcomed the writer because she made the lessons fun and interesting. The children identified the main reason for the practicum - "we care about you, your well being. Good nutrition is important for good health".

Questionnaire (Appendix A, 69)

Pre	Post
Most people preferred foods high in salt, sugar and fat. Advertisements for food had an impact on their food habits, which were taken blindly. Most wanted to loose weight, but had given less emphasis on exercise.	Increase in number of people preferring food low in salt, sugar and fat. Advertisements had less impact on food purchase. Most wanted weight loss, but gave more importance to exercise.
Many had no healthy choice activity.	Many had healthy choice activity.
Scores ranged from 5-7	Scores ranged from 7-10

Twenty each of staff and parents and 50 students were interviewed. Their scores were added and divided by the number of participants to obtain the average for their pre as well as posttest scores.

Analysis: The practicum made an improvement in student, parent and staff knowledge about nutrition and health.

The ten-item questionnaire had the same scoring method. A score of one was used for a healthy choice and zero was used for non-healthy choice.

The pretest scores ranged from 5-10.	The posttest scores ranged from 10-15.

Conclusions

The practicum experience, road blocks and results show the need for nutrition information, education and awareness at all levels of the population. A large number of children grow up with television as a means of information. This was apparent early on during the practicum experience. The children could verbally tell the practitioner that it is important to have more fruit and vegetables as this message had been a regular media feature promoted by the "5 A Day" National Public Awareness Program. However, children had no more knowledge about fresh fruits and vegetables. They had no more idea about the serious ills of fat, salt, or sugar in our diet. Packaged cereals, processed/fast foods were consumed regularly by children and adults with no knowledge about their poor nutritional benefits. Even though a local food chain had literature for consumer education, very few adults picked up these free booklets. 'Kids Corner', a monthly child-oriented brochure, was published by the same food chain. This publication was highly publicized and it was strategically placed at the entrance to the store. Still very few people picked up this free colorful child-oriented material, a sure sign of hurried parents and their lack of interest in the subject.

Public schools, where children learn and spend a great deal of time, did not have a good nutrition unit to teach

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youngsters. Some childcare centers, which operated in the school buildings could not hang any pictures on their walls. Their cafeteria and hallways did not display any posters or bulletin boards which featured nutrition. Where and how are the children going to learn about nutrition?

Daycare, where students spend the remainder of their day was operated by staff who did not have much education on nutrition. These adults, low-paid and overworked, had little time themselves to learn about the correct nutrition information. Their worksetting which did provide some resource material could not spare time for a general meeting which could feature a guest speaker. How were they going to learn about nutrition? Their source of information was the same, limited, faulty source as the children's: the media. Very few adults could identify a healthy choice activity they do. Very few children had their weight and height measurement taken by adults. Very few knew alternatives ways to cut fat and sugar. Very few had been aware of Recommended Dietary Allowance. No one knew about the newer approach to nutrition using the Pyramid as a guide, even though this has been featured by the local newspapers.

Adults who care for children (parents, schools, daycare, staff) are uninformed and have not shown adequate interest on the subject of nutrition. Many did not have enough knowledge and good food habits to teach children on

nutrition. Only interested adults who want to can learn about nutrition and make amends to establish good food habits. Food habits are difficult to change especially when media, the prime source of information, caters to big business commercially and bombards the public with it's faulty information in disguise. Magazines and newspapers mostly advertise colorful pictures of food items, convenient for the hurried lifestyle, but damaging and inadequate for physical growth and development. This means nutrition education should be powerful, strategically planned to target elementary children to promote good healthy habits. If children are well informed consumers, they can resist the big business propaganda and venture to consume healthy food items. Their interest, in turn, may motivate parents to develop a better family meal plan which will promote health through preventive measure. Relaxed, homelike daycare setting can also provide a positive social environment where children can cultivate the needed peer support for building healthy bodies. Nutrition education should involve adults at every stage as they, too, are in need of education. Most adults have to alter some of their existing personal practices in food intake or exercise. This is a difficult process. During this period, daycare staff and parents can provide encouragement and support for each other.

Other Interesting Developments: Children wanted a list of good cereals, snacks, etc. Staff wanted to know ways to cut salt and sugar. Fiber was a new topic to learn. Parents tried out new and unfamiliar products and children enjoyed seeing themselves in pictures. They were impressive detectives looking for hidden sugar and salt, and fat in processed food. Brown bread made a comeback. Fresh fruits were a new Cheer!

Meaning: Most learning institutions are overly pressed with day to day requirements. They did not place importance on topics like nutrition unless they are made official targets. Besides the three Rs, so many subjects (drug education, safety, multiculture, etc.) must be taught. Nutrition is taught as a part of health education. Time is limited so, important as it may be, nutrition will hang low on the list unless it is made a top priority.

A good nutritional education needs an interesting teacher and good materials for effective teaching. It does not need lots of time or funds. Children do show interest on this topic as they become aware of its importance for their good health. Positive nutritional contribution of various ethnic food items provide the 'food for the friendship' atmosphere among all children and the resulting good natured adventure is capable of residual barriers among children. Training and appropriate teaching resources that

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allow multidimensional approach to nutrition are needed inspire the teachers who can be creative and make learning FUN!

Recommendations

Teachers should be given in-service training on the subject. Teachers should be provided with age-appropriate teaching materials, not just cookbooks. Teachers would find the research findings about good healthy habits, current information on nutrition and its relationship to health, useful information to share with children and parents. This information should be brief, easy to read and colorful. A visual display of information on nutrition or student work sheets help active involvement, are good visual reminders, and provide support for the beginner learners. Multimedia approaches such as video, music, dance, art, are powerful ways to teach any subject, including nutrition. Rewards help. Catch someone doing or saying something that is a positive action for the theme. Reward them! Everyone likes to feel important. Take height, weight, blood pressure (when possible) to make students feel important. Even adults will benefit from the same approach. Overweight adults may feel self-conscious; be gentle during discussions about weight. Use hands-on materials and show actual samples of food items, especially when introducing new and

unusual ones. Set an example by your own behavior and interest on the subject. This will inspire children and even adults around you to try a variety of foods that are new to them. Your attitude and excitement are catchy. So, keep up your own interest level and remain open to continuous learning. Be realistic and flexible in your approaches. Do not become discouraged if your early attempts are not successful. Food habits are not so easy to change. Besides, you are competing with a powerful meditated source, so much more familiar to the children: the commercials. The writer's philosophical belief is that one can plant a seed, nurture it to grow and guard it until it becomes strong enough to keep growing itself. So a good nutrition education program has to be practical, easy and fun to use. It should help maintain student interest so they can keep up the learning and doing process on their own. Parent involvement is advocated and should be cultivated. However, it should not be depended upon because parents are too busy to take heed to new information. Moreover, the daycare staff has enough daily responsibility to deal with. Brochures and work sheets from the center are good ways to invite parents' interest. Children's individual attempts to create good eating habits are also good ways to educate parents. The Staff should always try to relate activities to parents, maintain a warm respectful

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relationship and be understanding of parent overload of responsibilities. A caring atmosphere is conducive to learning and positive change of any kind including nutritional education. The daycare or any learning institute should make attempts to inspire, inform children (the earlier, the better) by good role models, in a supportive environment. Healthy habits are extremely important for growing bodies of young children now, a measure of preventing health hazards for the future. Whereas parents, as adults, may require additional intervention as well as a different type of teaching approach to achieve the desired positive result.

A good nutrition educational program can be intellectually challenging, socially adaptable and provide positive structure for emotional development through active student-teacher interaction. It employs higher level thinking, promotes delayed satisfaction and prepares an informed consumer early on. Early childhood educator advocates must carry on this important responsibility for the sake of young children. Once empowered, a whole generation of young children will be enjoying good health that promotes many other areas of their life and our national strength and growth as well. Health is wealth - an old proverb can take a new slant: Nutrition is the road to good health and health leads to wealth. What a good way to

improve the economy! Young children are valuable assets of our nation. Their physical well-being depends on early nutritional education to establish healthy habits. A good curriculum can provide intellectual stimulation, positive social interaction and the much needed exercise for the growing children.

Dissemination

The writer will use these discoveries as her own learning experience to design hand-out materials that can be used with teachers. She will attempt to receive some funding to carry on this project during the summer months at other childcare programs as well. She will share this information with parents, teachers and children. She will write newspaper and magazines articles that help others become more interested and knowledgeable about nutrition. She will acquire pamphlets, brochures, etc. to be distributed as needed. She will make more use of a good vs not so good list for staples, such as cereals, breads, snacks, and meats. She will help staff, students and parents become more aware about consumer advocacy organizations such as CSPI and other publications that are good sources of correct, useful information about nutrition (i.e., Wellness Encyclopedia). What an exciting beginning for an important journey!

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APPENDIX A

QUESTIONNAIRE

Questionnaire

1. Have you ever been diagnosed as having high blood pressure?

2. Your weight _____ age _____.

3. Do you consider yourself overweight?

4. I would like to maintain your present weight/loose weight?

5. My favorite foods are: _____, _____, _____ favorite often.

6. Circle the correct response: When ever I can, I would run, play or watch TV, sleep or talk.

7. I usually have breakfast. YES NO

8. I like to watch advertisements on TV. YES NO

9. I/We like to buy food items advertised on TV.
YES NO

10. We try the fresh fruits, vegetables offered during lunch YES NO / dinner YES NO

11. Circle foods that are good for you.

a.	Potato chips	vs	Boiled potato
b.	Pretzels	vs	Unsalted peanuts
c.	Coke	vs	Juice/water
d.	Cheeseburger	vs	Lean meat sandwiches
e.	Milk shake	vs	Milk
f.	Cookies	vs	Crackers
g.	White bread	vs	Brown bread
h.	Canned vegetables with cream cheese	vs	Fresh vegetables with low calorie dressing
i.	Whole milk	vs	Low fat milk

12. It is important to eat food that is good for you.
YES NO

13. I like learning about nutrition. YES NO

14. Write or tell one thing you do that is a healthy choice - activity.

APPENDIX B

PRE/POST TEST

I Know My Nutrisense!

Pre/Post Test

1. Criteria - Fat vs Fruits and vegetables
   Choose items that are healthy choices from a given list:
   Example: Donuts vs Bagel
   Potato Chips vs Popcorn
   Ice Cream vs Frozen Yogurt

2. Choose oils that are a better choice for cooking:
   Example: Crisco vs Sunflower Oil

3. Give example of food items that are a healthy choice:
   Example: Fruits and vegetables of all kind
   Fruit with cream

4. Choose items that are better sources of vitamins and minerals (per serving).
   Example: Fresh peas vs Canned peas

5. Foods high in fat can make you _____ and _____.
   Example: fat and sick
   slim and healthy

6. It is good to eat 1, 2, 3, 4, 5, servings of fruits and vegetables. Circle your choice.

7. I'll eat more _____, _____, _____ and less _____, _____, _____.
   Fill in blanks: Potato chips, twinkies, cakes, apples, peas, pears

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Pre/Post Test

I Know My Nutrisense!

1. Criteria - Salt vs Fiber
   Choose items that are healthy choices from a given list.
   Example: Pretzels vs peanuts

2. Choose seasonings that are more healthy.
   Example: Salt vs saltsense
   Spices vs salt

3. Choose food items that are healthy choices (high fiber).
   Example: Brown rice vs white rice
   Whole wheat bread vs white bread

4. Show items that are excellent sources of vitamins and fiber.
   Example: Circle commercial items from a list.

5. Foods high in salt can make you sick. YES NO

6. Foods high in fiber (natural grains) can make you sick.
   YES NO

7. I will eat more _____, _____, _____,
   less _____, _____, _____.
   Example: Chips, ketchup, brown bread, prunes, raisins, almonds.

I Know My Nutrisense!

Pre/Post Test

1. Criteria - Sugar vs Calcium
   Choose items that are healthy choices from a given list.
   Example: Candy vs raisins
   Ice Cream vs yogurt with fruit

2. Choose sweeteners that are a better choice:
   Example: Nutrasweet, molasses, white sugar, honey

3. Choose food items that are good sources of calcium.
   Example: Milk vs soda
   Cheese vs chips

4. Show food items that are excellent sources of calcium.
   Example: Kale vs french fries
   Yogurt vs cookies

5. Foods high in sugar can cause tooth decay and other diseases. YES NO

6. It is good to east 1, 2, 3 servings of dairy products a day. YES NO

7. I will eat more _____, _____, _____,
   less _____, _____, _____.
   Example: Cookies, candy, soda, milk, cheese, yogurt.

APPENDIX C

NUTRITION INTERVIEW

Nutrition Interview

In the statements below, insert the number which most closely approximates your typical dietary habits (1-5).

1. I usually include _____ serving(s) of whole grain products everyday.
2. I usually like to eat _____ serving(s) of fruits and vegetables.
3. I usually drink ____ glass(es) of milk, ____ water, ____ soda everyday.
4. I like to include cakes, cookies, pies, etc. in my meals _____ times a day.
5. I usually select ____ foods rich in minerals and vitamins.

True or False

6. I am eating more fresh produce and whole grain products. T F
7. I boil vegetables and and drain out liquid. T F
8. I read, listen about nutrition from books, radio, TV, doctors or other sources. T F
9. It is important to make healthy choices in order to meet Recommended Daily Allowances for nutrition. T F
10. It is important to do regular exercise _____ time(s) (average) a week.

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"Beware of those foods that tempt you to at when you are not hungry and those liquors that tempt you to drink when you are not thirsty".

Socrates.